

ABSTRACT

MAGNETIC BIAS PINNING LAYER FOR GMR SENSOR OF A MAGNETIC HEAD FOR A HARD DISK DRIVE

5 A giant magneto-resistive (GMR) sensor for a magnetic head for a hard disk drive
is disclosed. The sensor includes: a free magnetic layer; a bias layer that provides a bias
magnetic field to the free magnetic layer and a bias pinning layer that provides a
stabilizing magnetic field to the bias layer and that has a width substantially longer than
the width of the free magnetic layer. Embodiments of the invention may further include
10 an anti-ferromagnetic layer having a width substantially longer than the width of the free
layer, or both an anti-ferromagnetic layer and a pinned magnetic structure each having a
width substantially longer than the width of the free layer.